

1 HP DIRTY WATER SUBMERSIBLE PUMP

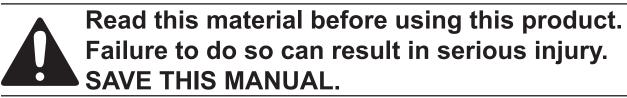


ASSEMBLY and OPERATING INSTRUCTIONS



Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein.

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For technical questions or replacement parts, please call 1-800-444-3353.

Specifications				
Motor	120 V, 60 Hz, 4.7 A (run)	Operating Temp.	95 Deg. F.	
Pump Cord	18 Ft 3 Prong Plug	Min. Switch Level	3"	
Discharge Size	1-1/2"	Overall Dimensions	6.5" Dia. x 12.375" H	
Discharge Fittings	1-1/4", 1-1/2" and 1"	Housing Material	PP Plastic	
Delivery Height	28.3 Ft.	Pump Weight	13.1 Lbs	
Flow Rate	3570 GPH	Motor Drive	Magnetic Drive	
Horsepower	1HP	Max. Particle Size	1"	

Warning: The pump should not be submerged in water deeper than the length of the power cord, which is 18 feet long.

Save This Manual

You will need the manual for the safety warnings and precautions, assembly instructions, operating and maintenance procedures, parts list and diagram. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Keep the manual and invoice in a safe and dry place for future reference.

Safety Warnings and Precautions

WARNING: When using tool, basic safety precautions should always be followed to reduce the risk of personal injury and damage to equipment. Read all instructions before using this tool!

- 1. Keep work area clean. Cluttered areas invite injuries.
- 2. **Observe work area conditions**. Keep work area well lighted. Do not use electrically powered tools in the presence of flammable gases or liquids.
- 3. **Keep children away**. Children must never be allowed in the work area. Do not let them handle machines, tools, or extension cords. Always lock up tools and keep out of reach of children.
- 4. **Do not force pump**. It will do the job better and more safely at the rate for which it was intended. Do not use inappropriate attachments in an attempt to exceed the pump capacity.
- 5. **Use the right pump for the job**. Do not attempt to force a small pump or attachment to do the work of a larger industrial pump. There are certain applications for which this pump was designed. Do not modify this pump and do not use this pump for a purpose for which it was not intended.

- 6. **Dress properly**. Do not wear loose clothing or jewelry as they can be caught in moving parts. Protective, electrically nonconductive clothes and nonskid footwear are recommended when working. Wear restrictive hair covering to contain long hair.
- 7. **Use eye and ear protection**. Always wear ANSI-approved impact safety goggles. Wear an ANSI-approved dust mask or respirator when working around metal, wood, and chemical dusts and mists.
- 8. **Do not overreach**. Keep proper footing and balance at all times. Do not reach over or across running machines.
- 9. **Maintain pump with care**. Inspect tool cords periodically and, if damaged, have them repaired by an authorized technician. Disconnect electrical source before performing any maintenance or troubleshooting.
- 10. Avoid unintentional starting. Dry running of the pump causes excess wear.
- 11. **Stay alert**. Watch what you are doing, use common sense. Do not operate any pump when you are tired.
- 12. **Check for damaged parts**. Before using any pump, any part that appears damaged should be carefully checked to determine that it will operate properly and perform its intended function.
- 13. **Guard against electric shock**. Prevent body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerator enclosures. It is strongly recommended that this pump be plugged into a Ground Fault Circuit Interrupter (GFCI). Ask a local electrician for easy installation instructions. To avoid electrical shock, no person or animal should be in contact with the water being pumped. Never walk on wet or damp area when pump is running in the same room.
- 14. **Replacement parts and accessories**. When servicing, use only identical replacement parts. Use of any other parts will void the warranty.
- 15. **Do not operate pump if under the influence of alcohol or drugs**. Read warning labels on prescriptions to determine if your judgment or reflexes are impaired while taking drugs. If there is any doubt, do not operate the pump.
- 16. Use proper size and type extension cord. If an extension cord is required, it must be of the proper size and type to supply the correct current to the tool without heating up. Otherwise, the extension cord could melt and catch fire, or cause electrical damage to the tool. This tool requires use of an extension cord of 0 to 10 amps capability (up to 50 feet), with wire size rated at 18 AWG. Longer extension cords require larger size wire. If you are using the tool outdoors, use an extension cord rated for outdoor use. (signified by "WA" on the jacket). Note: Do not make the extension cord connection underwater.
- 17. **Do not pump hazardous materials**. Do not pump explosive or flammable materials such as Fuel Oil, Kerosene, Gasoline etc. Do not pump in close proximity to flammable or explosive materials. Do not pump fats, oils, salt or waste water. This Pump is designed to move clean or dirty water. Do not pump hot liquid.

18. **Water transfers in cycles**. Do not attempt to manipulate the switch to keep pump running continuously. It is meant to shut off intermittently. Doing so will damage the pump.

Note: Performance of this pump (if powered by line voltage) may vary depending on variations in local line voltage. Extension cord usage may also affect pump performance.

Warning: The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

Unpacking

When unpacking, check to make sure the parts listed on page 8 are included. If any parts are missing or broken, please call Harbor Freight Tools at: **1-800-444-3353.**

Installation

Reminder: This pump should be plugged into an outlet fitted with a Ground Fault Circuit Interrupter (GFCI).

Note: Hose connection is covered on page 5.

- 1. Make sure the pump rests on a flat, level, and solid foundation. Never operate on earth, clay, sand, or gravel surfaces.
- 2. Never suspend the pump from the power cord or discharge pipe. You may firmly attach a rope to the carry handle.
- 3. Keep the pump inlet openings, near the suction base, clear of debris.
- 4. Avoid installation in areas of extreme heat or cold.
- 5. If the piping you install runs in excess of ten feet, it is recommended you use a check valve (not included) to prevent back flow, which could lead to rapid cycling. To avoid air locks in the pump, drill a 1/8" hole in the piping between the check valve and the pump.

Sump Installation (all instructions above apply)

- 1. The sump pit must have a minimum diameter of 11" and maximum depth of 18 feet.
- 2. Construct the pit of tile, plastic, concrete, or steel.
- 3. Set the pump on a brick or block slightly smaller than the pit. Fill the pit with clean 1" or larger stones to surround the lower half of the pump to keep it stable. The stones should be large enough to not clog any of the inlets.
- 4. Test pump (see Operation on page 6).
- 5. Install a sump cover to protect the pump from falling debris.

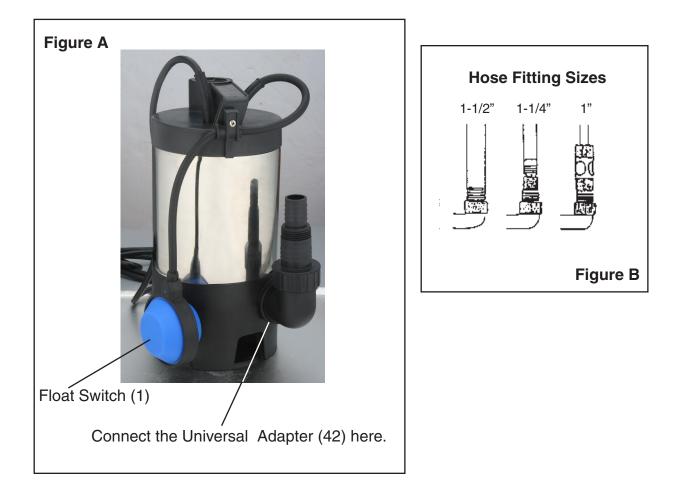
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Installation (continued)

Hose Connection: The Universal Fitting (42), in Figure B, connects to various hose sizes. The hoses should be connected using a step nipple (not included). The 1" and 1-1/4" hoses should also be secured with hose clamps (not included). The largest connection (1-1/2") will yield the greatest flow. The top of the Universal Fitting may be removed to fit on various size hoses (see Figure B). Use a knife to gently trim any unneeded material.

Note: Use a pipe joint sealant to ensure air tight operation.

Note: (Optional) To reduce vibration and noise, a short section of rubber hose (1-1/4" x 1- 3/8" inside dia.) may be attached to the discharge line, using clamps (hose and clamps not included).



Operation

Warning: Do not run the pump dry. It will increase wear to the unit and possibly cause seal damage.

Note: This pump has a built-in thermal protector for the motor, which automatically shuts it off to avoid overheating. After it cools, it will cycle back on. Wait for the cycle to continue. Do not try to turn on the pump manually after it has cut off.

- 1. Plug unit into an outlet fitted with a Ground Fault Circuit Interrupter (GFCI).
- 2. The pump will automatically turn on when the water level, or the sump, has filled to approximately 3" above the base. It will stop when the water level drops below 3". It will continue to recycle thereafter.
- 3. Check that the discharge water travels several feet from the foundation.

Float Switch Adjustment

There is a Cable Clip (11) that is connected to the Pump Housing (13). The Float Switch (1) cord snaps into the Cable Clip (11) (see page 8). You can adjust the level that the Pump turns on by adjusting the length of the Float Switch cord.

Note: If air bubbles are spotted around the handle or pressure switch, this is normal. It is trapped air escaping from the unit. This pump is equipped with a de-aerating device which removes air locked in the pump. Also, if the water level drops below the Vent Valve (see page 7 figure B), some water might purge from the pump from the Vent Valve. This is normal. More on air escape is covered in the troubleshooting section.

Maintenance

Pump Motor Maintenance

- 1. Any repair or replacement of parts should be performed by a qualified service technician.
- 2. Inlets should be inspected periodically and any debris which clogs them should be removed. **Note:** Before performing inlet cleaning, disconnect pump from electrical source).
- 3. Periodically clean the Base (38). Remove the Screws (41) from the Base (38) and remove any dirt or debris. Replace the Base (see page 8).

Troubleshooting

Problem 1: Pump runs but will not deliver any water.

Cause: Base (38) clogged.

Solution: Remove the Screws (1) from the Base (38) and remove Base (38). Clean out dirt or debris and replace.

Cause: When starting, the pump water height falls below the minimum water level.

Solution: Submerge pump deeper.

Cause: Low line voltage.

Solution: Consult with an electrician.

Cause: Optional check valve stuck or installed backwards.

Solution: Remove and examine check valve.

Problem 2: Pump won't start or run.

Cause: No power or line voltage problem.
Solution: Check power connections and fuses. Consult with an electrician.
Cause: Water level too low.
Solution: Add more water to sump or put pump in a lower location.
Cause: Thermal overload switch has activated.
Solution: See Note at the top of page 6.
Cause: Base (38) clogged.
Solution: Remove the Screws (41) from the Base (38) and remove Base (38).
Clean out dirt or debris and replace.
Cause: Tangled Float Switch (1).
Solution: Arrange so Float Switch (1) moves freely.
Cause: Defective motor or Float Switch (1).
Solution: Have a qualified service technician repair or replace.

Problem 3: Excessive noise or vibration.

Cause: Worn bearings.

Solution: Have a qualified service technician repair or replace.

Cause: Debris in Impeller (29).

Solution: Remove the Screws (41) from the Base (38) and remove Base (38). Clean out dirt or debris and replace.

Cause: Discharge restricted.

Solution: Clean pump and piping.

Problem 4: Pump starts and stops too frequently.

Cause: Water temperature too high.

Solution: Never exceed temperatures above 95 degrees F.

Cause: Defective or entangled Float Switch (1).

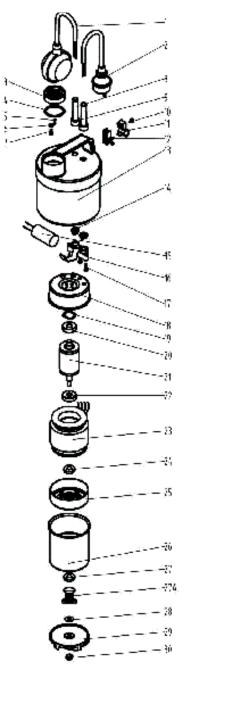
Solution: Arrange the Float Switch (1) so that it moves freely.

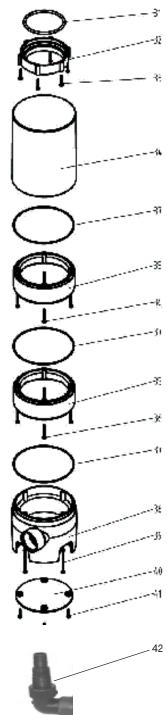
Cause: Back flow of water from piping.

Solution: Install or inspect check valve (optional).

Note: Many problems occur due to a clogged Base (38). Remove the Screws (41) from the Base (38) and remove the Base (38). Clean out dirt or debris from the bottom of the Pump and replace Base (38) using the same screws (see page 8).

Parts List





NO.	Description	Qty.
1	Float Switch	÷
2	Cable and Plug	1
3	cover	1
4	o-ring	1
5	stainless steel ball	1
6	washer	1
7	screw	1
8	cable grand	1.
9	cable grand	1
10	Screw.	1
11	Cable clip	1
12	Cable clip	1
13	pump housing	1
- 14	cable compaction buckle	2
15	Capacitor	1
16	cable compaction buckle	1
17	screw	3
18	Leat const	1
19	Under Washer	1.
20	bearing	1
21	rotor	1
22	bearing	1.
23	stator	1
24	oil seal	1
25	motor foreside	1
26	front cover	1
- 27	oil seal	2
28	washer	1
29	Impeller	1
30	nut	1
31	o type seal	1
. 32	pressed ring	1
- 33	screw	6
34	stainless steel sleeve	1
35	mesosphere	1
36	screw	4
37	o type seal	1
38	base	1
39	screw	4
- 40	solepiate	1
41	SCIEW	3
42	Universal Adapter	

NOTE: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

LIMITED 1 YEAR / 90 DAY WARRANTY

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that for a period of ninety days from date of purchase that the engine/motor, the belts (if so equipped), and the blades (if so equipped) are free of defects in materials and workmanship. Harbor Freight Tools also warrants to the original purchaser, for a period of one year from date of purchase, that all other parts and components of the product are free from defects in materials and workmanship (90 days if used by a professional contractor or if used as rental equipment). This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUD-ING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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